

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 42454	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/IB2008/050946	International filing date (day/month/year) 14/03/2008	(Earliest) Priority Date (day/month/year) 14/03/2007
Applicant EPOS TECHNOLOGIES LIMITED		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6b/s(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No. III)

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 9
☐ as suggested by the applicant
☒ as selected by this Authority, because the applicant failed to suggest a figure
☐ as selected by this Authority, because this figure better characterizes the invention
b. ☐ none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2008/050946

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H04R19/00 G06F3/043

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04R G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TW 235 010 B (TAIWAN CAROL ELECTRONICS CO LT [TW]) 21 June 2005 (2005-06-21) figure 2	1-36
A	US 2005/077102 A1 (BANTER CHAD A [US] ET AL) 14 April 2005 (2005-04-14) paragraphs [0001] - [0007], [0052], [0053]; figures 1a, 1b	1, 24-30
A	NEUMANN J J ET AL: "CMOS-MEMS membrane for audio-frequency acoustic actuation" SENSORS AND ACTUATORS A, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 95, no. 2-3, 1 January 2002 (2002-01-01), pages 175-182, XP004377889 ISSN: 0924-4247 pages 175, 182	3-19
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Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

8 December 2008

Date of mailing of the international search report

16/12/2008

Name and mailing address of the ISA/

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Righetti, Marco

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2008/050946

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JUNGE S ET AL: "Simulation of capacitive micromachined ultrasonic transducers (cMUT) for low frequencies and silicon condenser microphones using an analytical model" 2003 IEEE ULTRASONICS SYMPOSIUM PROCEEDINGS, HONOLULU, HAWAII, OCT. 5 20031005; 20031005 - 20031008 NEW YORK, NY : IEEE, US, vol. 1, 5 October 2003 (2003-10-05), pages 485-488, XP010701172 ISBN: 978-0-7803-7922-0 page 487	3-19
A	WO 2007/004119 A (KONINKL PHILIPS ELECTRONICS NV [NL]; PHILIPS INTELLECTUAL PROPERTY [DE]) 11 January 2007 (2007-01-11) page 14, lines 4-19; figures 8,9	3-19
A	JIAN CAI ET EL: "A Study on Packaging of PZT MEMS Microphone" 2005 ELECTRONICS COMPONENTS AND TECHNOLOGY CONFERENCE, LAKE BUENA VISTA, FL, USA, [Online] - 3 June 2005 (2005-06-03) pages 1077-1080, XP002488699 piscataway, NJ, USA, IEEE ISBN: 978-0-7803-8907-6 Retrieved from the Internet: URL: http://ieeexplore.ieee.org/iel5/9844/31024/01441405.pdf the whole document	22,23, 33,36
X	WO 2006/100682 A (EPOS TECHNOLOGIES LTD [GB]; RAIF RAN [IL]; KEDEM NOAM [IL]; KOKAREV MI) 28 September 2006 (2006-09-28) page 30, line 11 - page 33, line 17; figures 13-15 page 37, lines 1-3; claims 8,27	37-51, 54-68
A	WO 01/35329 A (ITPEN LTD [IL]; SHOLEV MORDEHAI [IL]) 17 May 2001 (2001-05-17) abstract; figures 1b,1c	39-41, 47,58
A	US 2004/032399 A1 (SEKIGUCHI HIDENORI [JP] ET AL) 19 February 2004 (2004-02-19) paragraphs [0061] - [0063]; figures 3a-3c	51,55,60
A	US 2003/151596 A1 (MOYNE WILLIAM P [US] ET AL MOYNE WILLIAM P [US] ET AL) 14 August 2003 (2003-08-14) abstract; figures 1-4d	37-68

INTERNATIONAL SEARCH REPORT

International application No.
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Box No. II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-36

MEMS microphone comprising a mesh covering the open front side of the case.

2. claims: 37-68

Acoustic positioning system comprising a receiver which makes use of two MEMS microphones sensitive to ultrasound waves

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
TW 235010	B	21-06-2005	NONE	
US 2005077102	A1	14-04-2005	CN 1883242 A EP 1685740 A2 JP 2007510326 T KR 20060085958 A WO 2005039234 A2	20-12-2006 02-08-2006 19-04-2007 28-07-2006 28-04-2005
WO 2007004119	A	11-01-2007	CN 101213142 A KR 20080023313 A	02-07-2008 13-03-2008
WO 2006100682	A	28-09-2006	AU 2006225986 A1 CA 2601313 A1 CN 101180601 A EP 1861771 A2 JP 2008535051 T KR 20070114397 A US 2008166048 A1	28-09-2006 28-09-2006 14-05-2008 05-12-2007 28-08-2008 03-12-2007 10-07-2008
WO 0135329	A	17-05-2001	AR 028185 A1 AT 274723 T AU 778324 B2 AU 1073000 A CA 2390362 A1 DE 69919759 D1 DE 69919759 T2 EP 1228480 A1 JP 2003514310 T MX PA02004592 A TW 550512 B	30-04-2003 15-09-2004 25-11-2004 06-06-2001 17-05-2001 30-09-2004 01-09-2005 07-08-2002 15-04-2003 10-09-2004 01-09-2003
US 2004032399	A1	19-02-2004	JP 4146188 B2 JP 2004078496 A	03-09-2008 11-03-2004
US 2003151596	A1	14-08-2003	GB 2388077 A	05-11-2003